

Instructions for printing the SpaceSim QuickRef. Card

1. Print page 2 and 3 of this document (each on a separate sheet of paper) for the medium size QuikRef. Card (Approximately 5" X 7"). .

Print page 4 and 5 of this document (each on a separate sheet of paper) for the large size QuikRef. Card (Approximately 7" X 9"). .

It is suggested that you print on Matte Photo Paper in color using the highest quality setting your printer is capable of.

2. Trim each card on the dashed line using either a paper cutter (preferred) or a pair of scissors. Try to avoid leaving any of the black dashed line showing (for best appearance).
3. Put each page together back-to-back so that Side A is showing on one side, and Side B is showing on the other side both in the correct orientation. Assure all edges are lined up. If desired, glue both pieces together using a very tiny amount of glue, or a glue stick (preferred). Laminate these two pages together in plastic assuring that there is a minimum 1/8-inch to 1/4-inch border from the edge of the paper to the edge of the lamination. Most print shops and service bureaus will laminate a small document at a very reasonable cost or you can do it yourself if you have the equipment.

1 OPEN PAYLOAD BAY

OPEN/CLOSE PAYLOAD BAY	F4, #4 Btn.
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OPEN PAYLOAD BAY DOORS TO EXPOSE THE ORBITER DOCKING SYSTEM (ODS)

FOR HIGHEST REALISM


**USE ONLY "FORWARD"
"AFT" AND "AFT-
OVERHEAD" VIEWS.
FOR "AFT-OVERHEAD",
USE "AFT" AND ROTATE
VIEW UPWARD.**

SPACESIM
ORBITER DOCKING
SIMULATION
QUIKREF

YOUR STEP-BY-STEP GUIDE TO DOCKING THE SPACE SHUTTLE

2 LOCATE AND FLY TOWARDS YOUR DOCKING PORT (PMA-2) ON THE INTERNATIONAL SPACE STATION

SELECTIN
VIEWS

F1 
ISS ZOOM
ORB. TRK.
PMA TRK.
APPR. ZOOM
DOCK ZOOM

F2 
FORWARD
AFT
PAYLOAD BAY
EVA

LOCATED
ON
TOP OF
JOYSTICK

MOVING & LOOKING AROUND
SOME VIEWS DO NOT ENABLE YOU
TO MOVE AND/OR LOOK AROUND

MOUSE	VIEW
FORWARD	ROTATE DOWN
BACKWARD	ROTATE UP
LEFT	ROTATE LEFT
RIGHT	ROTATE RIGHT
LEFT BUTTON	MWVE FWD.
RIGHT BUTTON	MWVE BACK

Diagram illustrating the movement directions for a mouse or trackball (top view). The device is shown with four primary movement directions indicated by arrows and corresponding button labels:

- Forward:** PRESS TO MOVE FORWARD (indicated by an upward arrow)
- Backward:** PRESS TO MOVE BACKWARD (indicated by a downward arrow)
- Left:** ROTATE VIEW LEFT (indicated by a leftward arrow)
- Right:** ROTATE VIEW RIGHT (indicated by a rightward arrow)

Additional labels around the device include:

- ROTATE VIEW DOWN** (above the forward button)
- ROTATE VIEW UP** (below the backward button)
- ROTATE VIEW LEFT** (to the left of the left button)
- ROTATE VIEW RIGHT** (to the right of the right button)

MOUSE OR TRACKBALL (TOP VIEW)

- MOVING THE ORBITER AROUND (FIRING ENGINES)

 TRANSLATION (X,Y,Z)

⊗ ROTATION (PITCH, ROLL, YAW)

MOVE JOYSTICK	ORBITER MOVES	MOVE JOYSTICK	ORBITER ROTATE
FORWARD	FORWARD	FORWARD	PITCH DOWN
BACKWARD	BACKWARD	BACKWARD	PITCH UP
LEFT	LEFT	LEFT	ROLL LEFT
RIGHT	RIGHT	RIGHT	ROLL RIGHT
TWIST LEFT	DOWN	TWIST LEFT	YAW LEFT
TWIST RIGHT	UP	TWIST RIGHT	YAW RIGHT

Diagram illustrating the 3-axis joystick controls for engine power and attitude:

- Top Joystick:**
 - Up: MOVE ORBITER FORWARD
 - Down: MOVE ORBITER BACKWARD
 - Left: MOVE ORBITER LEFT
 - Right: MOVE ORBITER RIGHT
 - Trigger Released: MOVE ORBITER UP
 - Trigger Pressed: MOVE ORBITER DOWN
- Bottom Joystick:**
 - Up: PITCH ORBITER DOWN
 - Down: PITCH ORBITER UP
 - Left: ROLL ORBITER LEFT
 - Right: ROLL ORBITER RIGHT
 - Yaw Orbiter Right: YAW ORBITER RIGHT
 - Yaw Orbiter Left: YAW ORBITER LEFT

JOYSTICK VARIES ENGINE POWER UP TO THROTTLE SETPOINT - 3-AXIS JOYSTICK (TOP VIEW)

SPACESIM - ORBITER DOCKING SIMULATION - QUIKREF

YOUR STEP-BY-STEP GUIDE TO DOCKING THE SPACE SHUTTLE

SPACESIM - FULL COMMAND LIST

VIEWS RELATED

CHANGE MAIN VIEWS

F1, F2, "v", "V",
JOYSTICK HAT SWITCH
LEFT,RIGHT,FWD.,BACK

INSET WINDOW - OFF/DEMOS/ODS

"INSERT", "m", PGUP, PGDN,
JOYSTICK BTN. 3

SWING DEMOS VIEW LEFT/RIGHT

LEFT ARROW,RIGHT ARROW

ZOOM DEMOS VIEW IN/OUT

UP ARROW,DOWN ARROW

MAIN CONTROL PANEL ON/OFF

[DELETE] or "c"

INCREASE/DECREASE MAIN PANEL TRANSPARENCY

"", "

INCREASE/DECREASE INSET PANEL TRANSPARENCY

"<", ">"

RESET VIEWPOINTS

"R"

MOVEMENT RELATED

RESET SHUTTLE POSITION

"S"

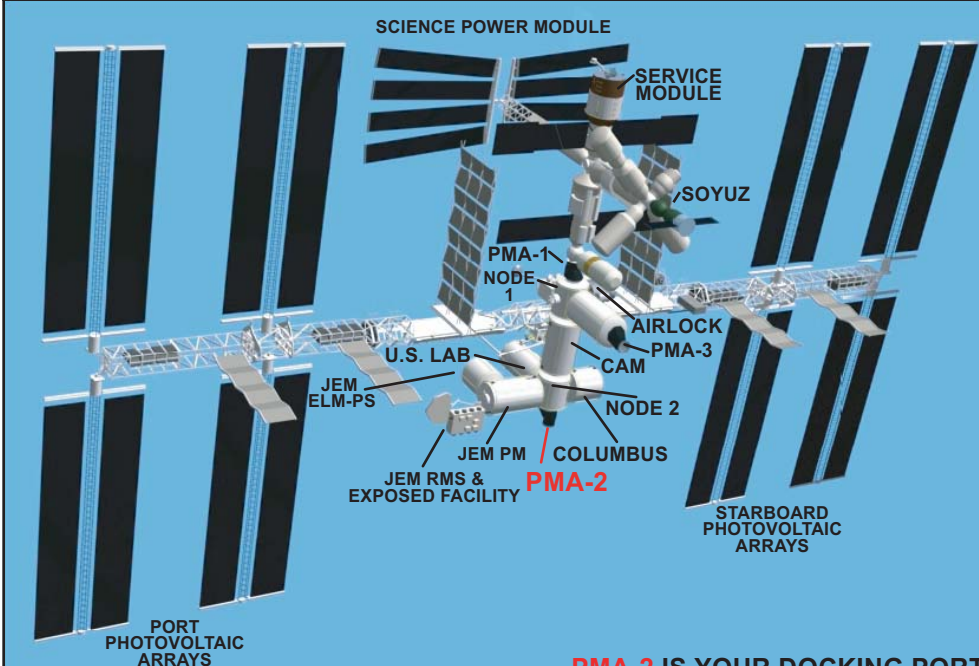
TOGGLE MOUSE/JOYSTICK BETWEEN MOVING YOURSELF AND MOVING ORBITER

"s"

TOGGLE AND RESET HEAD SENSOR (ADVANCED V.R. ONLY)

[HOME], or "f"

SPACESIM - INTERNATIONAL SPACE STATION - ASSEMBLY DRAWING



PMA-2 IS YOUR DOCKING PORT

ORBITER SYSTEMS

OPEN/CLOSE PAYLOAD BAY

F4, "d", JOYSTICK BTN. 4

ATTITUDE HOLD ON/OFF

F3, "r", JOYSTICK BTN. 2

ODS POWER ON/OFF

F5, "p", JOYSTICK
BTN. 5

ODS LATCHES DISENGAGE

(LATCHES AUTO-ENGAGE)

F7, "l", JOYSTICK BTN. 6

INCREASE/DECREASE

THROTTLE

"+", "-", THROTTLE

ABORT MISSION

[END] OR "x"

MISCELLANEOUS

CYCLE THROUGH

PRESET WINDOWS

(NORM, WIDE, DOME)

"w"

DISPLAY INFO. IN

UPPER/LEFT CORNER

"i"

LAUNCH

DEMO

MODE

F9 OR "d"

AUTO-

DOCK

F8, "a",
or "A"

SIDE B - TURN THIS CARD OVER FOR YOUR STEP-BY-STEP DOCKING PROCEDURE

QUIKREF. VER. 2

1 OPEN PAYLOAD BAY

OPEN/CLOSE PAYLOAD BAY F4, #4 Btn.

OPEN PAYLOAD BAY DOORS TO EXPOSE THE ORBITER DOCKING SYSTEM (ODS)

FOR HIGHEST REALISM

USE ONLY "FORWARD", "AFT" AND "AFT-OVERHEAD" VIEWS. FOR "AFT-OVERHEAD", USE "AFT" AND ROTATE VIEW UPWARD.

SPACESIM
ORBITER DOCKING
SIMULATION
QUIKREF

YOUR STEP-BY-STEP
GUIDE TO DOCKING
THE SPACE SHUTTLE

2 LOCATE AND FLY TOWARDS YOUR DOCKING PORT (PMA-2) ON THE INTERNATIONAL SPACE STATION

SELECTING VIEWS

F1

ISS ZOOM
ORB. TRK.
PMA TRK.
APPR. ZOOM
DOCK ZOOM

F2

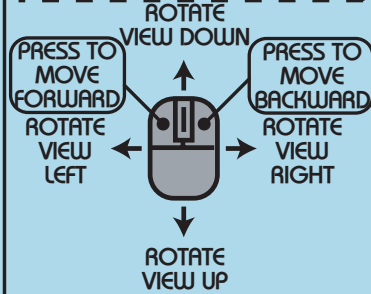
FORWARD
AFT
PAYLOAD BAY
EVA

LOCATED
ON
TOP OF
JOYSTICK

MOVING & LOOKING AROUND

SOME VIEWS DO NOT ENABLE YOU TO MOVE AND/OR LOOK AROUND

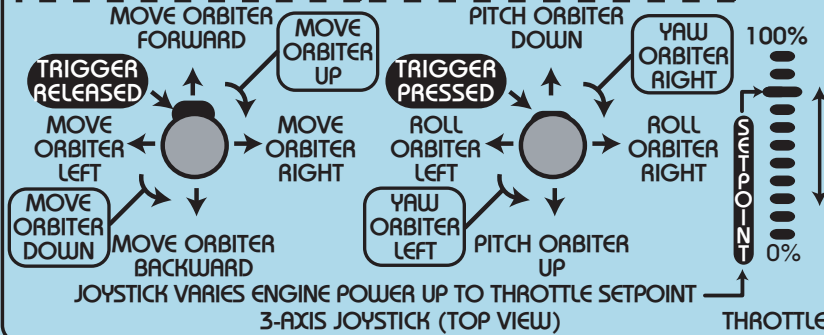
MOUSE	VIEW
FORWARD	ROTATE DOWN
BACKWARD	ROTATE UP
LEFT	ROTATE LEFT
RIGHT	ROTATE RIGHT
LEFT BUTTON	MOVE FWD.
RIGHT BUTTON	MOVE BACK



MOVING THE ORBITER AROUND (FIRING ENGINES)

TRANSLATION (X,Y,Z) ROTATION (PITCH, ROLL, YAW)

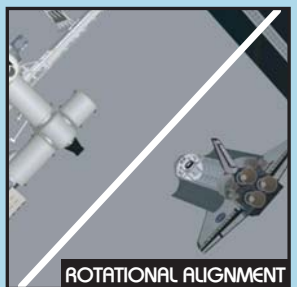
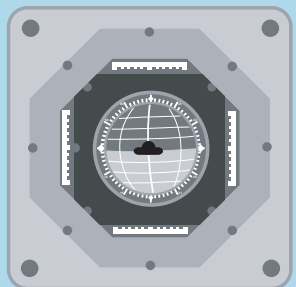
MOVE JOYSTICK	ORBITER MOVES	MOVE JOYSTICK	ORBITER ROTATES
FORWARD	FORWARD	FORWARD	PITCH DOWN
BACKWARD	BACKWARD	BACKWARD	PITCH UP
LEFT	LEFT	LEFT	ROLL LEFT
RIGHT	RIGHT	RIGHT	ROLL RIGHT
TWIST LEFT	DOWN	TWIST LEFT	YAW LEFT
TWIST RIGHT	UP	TWIST RIGHT	YAW RIGHT



LOCATE AND FLY TOWARDS PRESSURIZED MATING ADAPTER #2 (PMA-2) ON THE INTERNATIONAL SPACE STATION (ISS). DO THIS BY SELECTING APPROPRIATE VIEWS, MOVING & LOOKING AROUND AND FIRING THE ORBITER'S ENGINES. STOP YOUR APPROACH WHEN YOU ARE IN FRONT OF AND DIRECTLY OPPOSITE PMA-2. IF NECESSARY, USE THE ILLUSTRATION ON THE BACK OF THIS CARD TO LOCATE PMA-2.

3 PERFORM ODS/PMA ROTATIONAL ALIGNMENT

▼ ADI Disp. (SELECT "FORWARD" OR "AFT" VIEW)



ROTATIONAL ALIGNMENT

PERFORM ROTATION MANEUVERS UNTIL THE ATTITUDE (PITCH, ROLL, AND YAW) OF THE ODS MATCHES THAT OF PMA-2. IF YOU USE THE ADI AS AN ALIGNMENT AID, SELECT "FORWARD" OR "AFT" VIEW. THE DISPLAY ABOVE INDICATES ODS/PMA-2 ROTATIONAL ALIGNMENT.

4 ATTITUDE HOLD "ON"

TURN ON/OFF ATTITUDE HOLD F3, #2 Btn.

IF DESIRED, YOU CAN ACTIVATE "ATTITUDE HOLD" TO PREVENT ACCIDENTLY CHANGING YOUR ATTITUDE SET IN THE PREVIOUS STEP.

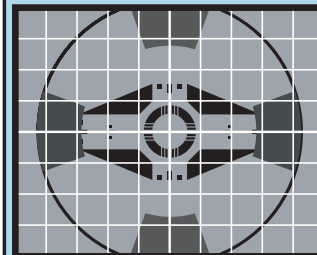
5 ODS POWER "ON"

TURN ON/OFF ODS POWER F5, #5 Btn.

TURN ON ODS POWER TO ENERGIZE LATCHES

6 PERFORM ODS/PMA TRANSLATIONAL ALIGNMENT

▼ ODS CAM. (SELECT "FORWARD", "AFT", "BAY", "EVA" VIEW)



PERFORM TRANSLATIONAL MANEUVERS ONLY UNTIL THE PMA-2 DOCKING TARGET IS CENTERED IN THE MIDDLE OF THE ODS CAM. VIEW AS SHOWN ABOVE (LEFT).

IF ODS CAM. VIEW EVER DISAPPEARS WHILE CHANGING VIEWS, PRESS [PgUp], [PgDn] OR JOYSTICK BTN. #3 UNTIL IT IS DISPLAYED AGAIN.

7 DOCKING



PERFORM FINAL "up" TRANSLATION MANEUVER TO BRING THE TWO DOCKING PORTS TOGETHER. LATCHES WILL AUTO-ENGAGE AT CONTACT.

SIDE A - TURN THIS CARD OVER FOR THE FULL SPACESIM COMMAND LIST AND ISS PICTORIAL ILLUSTRATION

QUIKREF. VER. 2

SPACESIM - ORBITER DOCKING SIMULATION - QUIKREF

YOUR STEP-BY-STEP GUIDE TO DOCKING THE SPACE SHUTTLE

SPACESIM - FULL COMMAND LIST

VIEWS RELATED

CHANGE MAIN VIEWS

F1, F2, "v", "V",
JOYSTICK HAT SWITCH
LEFT,RIGHT,FWD.,BACK

INSET WINDOW - OFF/DEMOS/ ODS

"INSERT", "m", PGUP, PGDN,
JOYSTICK BTN. 3

SWING DEMOS VIEW LEFT/ RIGHT

LEFT ARROW,RIGHT ARROW

ZOOM DEMOS VIEW IN/OUT

UP ARROW,DOWN ARROW

MAIN CONTROL PANEL ON/ OFF

[DELETE] or "c"

INCREASE/DECREASE MAIN PANEL TRANSPARENCY

",""

INCREASE/DECREASE INSET PANEL TRANSPARENCY

"<",">"

RESET VIEWPOINTS

"R"

MOVEMENT RELATED

RESET SHUTTLE POSITION

"S"

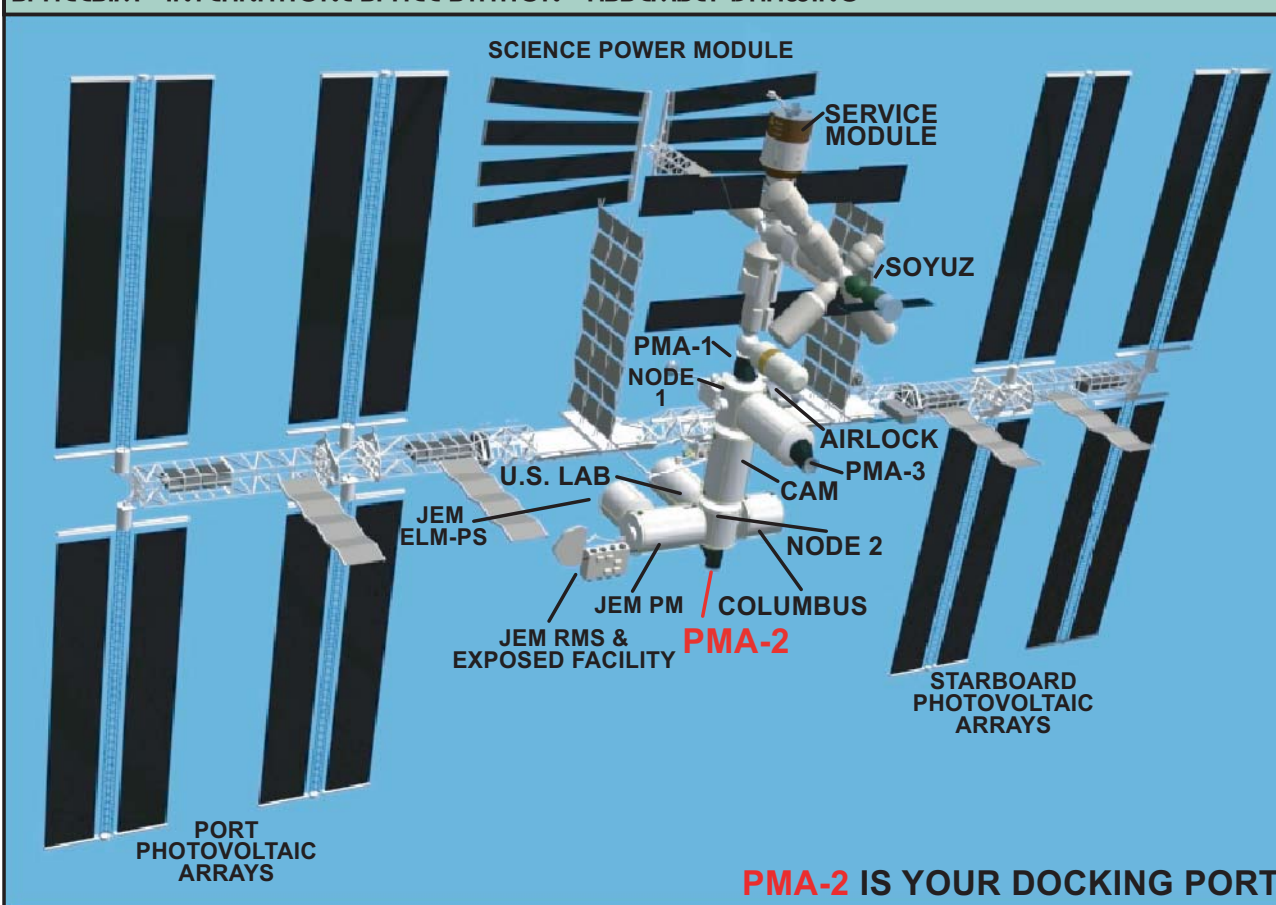
TOGGLE MOUSE/JOYSTICK BETWEEN MOVING YOURSELF AND MOVING ORBITER

"s"

TOGGLE AND RESET HEAD SENSOR (ADVANCED V.R. ONLY)

[HOME], or "f"

SPACESIM - INTERNATIONAL SPACE STATION - ASSEMBLY DRAWING



PMA-2 IS YOUR DOCKING PORT

ORBITER SYSTEMS

OPEN/CLOSE PAYLOAD BAY

F4, "d", JOYSTICK BTN. 4

ATTITUDE HOLD ON/OFF

F3, "r", JOYSTICK BTN. 2

ODS POWER ON/OFF

F5, "p", JOYSTICK
BTN. 5

ODS LATCHES DISENGAGE (LATCHES AUTO-ENGAGE)

F7, "I", JOYSTICK BTN. 6

INCREASE/DECREASE THROTTLE

","+","-", THROTTLE

ABORT MISSION

[END] OR "x"

MISCELLANEOUS

CYCLE THROUGH PRESET WINDOWS (NORM, WIDE, DOME)

"w"

DISPLAY INFO. IN UPPER/LEFT CORNER

"i"

LAUNCH DEMO MODE

F9 OR "d"

AUTO-DOCK

F8, "a",
or "A"

SIDE B - TURN THIS CARD OVER FOR YOUR STEP-BY-STEP DOCKING PROCEDURE

QUIKREF. VER. 2